Space Weather Forecast

Issued on Thursday, 29 August 2024 at 13:26 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

Space Weather Forecast Headline: Moderate-class flares likely.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Low with only common class flares observed, the largest from just over the southeast limb. There are nine regions currently on the disc, with the larger of the sunspot regions in the southeast the most likely flare source. This is a moderately sized but compact region and has some apparent complexity, however it currently remains too close to the southeast limb to accurately assess. The other regions on the disc remain relatively simple, with no significant growth observed.

A couple of eruptions were observed from the northwest disc, just before 29/0100 UTC and around 21/0610 UTC, however imagery has been inconclusive for any Earth-directed coronal mass ejection (CME). No other Earth-directed CMEs were observed.

Solar Wind / Geomagnetic Activity: Solar wind parameters continued to show ongoing influence from a CME that arrived early on 27 Aug. Solar winds remains speeds persisted at background, while the Interplanetary Magnetic Field, continued to be strong. The north-south component of the field exhibited a gradual but turbulent rotation from moderately negative (southward) to be strongly positive (northward). Geomagnetic activity has been Quiet to Unsettled (Kp1-3).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) continued to be at background with no Solar Radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Low to Moderate activity is forecast with Moderate-class flares likely and a slight chance of isolated Strong flares occurring.

Solar Wind /Geomagnetic Activity: There are no Earth-directed CMEs. Current CME enhancement is forecast to soon wane, however any fast wind from the small coronal hole on the western disc may give a slight enhancement to the solar wind on days 1 and 2 (29-30 Aug), although confidence is low. Geomagnetic activity is expected to be mainly Quiet throughout with isolated Unsettled intervals. There is a chance of Active intervals, with a slight chance G1 Minor Storms, from any fast wind enhancement day 1-2 (29-30 Aug) and again late day 4 (01 Sep).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons)is forecast to be at background with only a slight chance of Solar Radiation storms occurring

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	10	10	1	5
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	60	60	60	60
Very Active	R3 to R5 X	No	10	10	10	10

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	10	10	10	10
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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